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(19) (CA) **CANADIAN PATENT** (12)

(54) Fencing and Like Structures

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# ABSTRACT

A fencing structure comprises a pair of spaced apart post members, top and bottom rails extending between the post members, an open panel secured between the top and bottom rails and means for securing the ends of each rail to the respective posts; the fencing structure is light in weight and may be readily assembled from standard components to provide an attractive yet functional fencing structure.

This invention relates to fencing and like structures such as ballustrades.

For the sake of brevity the invention will be described in relation to a fencing structure but it is to be understood that the invention is not limited thereto as it may be applied to ballustrades, divider walls, partitions, gates, security enclosures and diverse other structures of a panel nature. The term "fencing structure" as used herein embraces all such uses and applications of the invention.

Known types of fencing structures are indeed many and varied. For example, in the specialised field of swimming pool safety fencing there are many different kinds of fencing available. In the main, however, they tend to have the appearance of mesh and as such are not particularly attractive.

It is an object of this invention to provide a light weight fencing structure which may be readily assembled from standard components to provide an attractive yet functional fencing structure.

According to the invention there is provided a fencing structure comprising a pair of spaced apart post members, top and bottom rails extending between the post members, an open panel secured between the top and bottom rails and means for securing the ends of each rail to the respective posts.



According to another aspect of the invention there is provided a fencing structure comprising:-

- 5 (i) a pair of spaced apart upright post members each having vertically extending channel means with the channel means of each post facing one another,
- (ii) a top rail of inverted channel form extending between the post members and having inwardly directed webs defining a panel-receiving throat that extends along the rail,
- 10 (iii) bottom rail means extending between the post members and having a panel-receiving throat that extends along the bottom rail means,
- 15 (iv) a rectangular panel extending between, and secured to the top rail and the bottom rail means with the top edge of the panel in the throat of the top rail and its bottom edge in the throat of the bottom rail means, and,
- 20 (v) means for securing the ends of the top rail to the respective post members, said securing means including:

(a) a bracket having a first flange  
located in the channel means of the  
post member and a second flange  
located in the end of the rail,

5 (b) means for fixing the first flange to  
the post member, and,

(c) means for securing the second flange  
to the inturned webs of the rail.

In order that the invention may be more readily  
10 understood and put into practical effect, reference will now  
be made to the accompanying drawings in which:-

Fig. 1 is a partially cut away, perspective view  
of a fencing structure according to one  
embodiment of the invention,

15 Fig. 2 is a cross-sectional view of the top rail  
of the fencing structure shown in Fig. 1,

Fig. 3 is an exploded view showing the means for  
securing the top rail to the post member,

Fig. 4 is a perspective view of the post of the  
20 fencing structure shown in Fig. 2 showing  
alternative forms of post caps,

Fig. 5 is a view similar to Fig. 3 but showing an  
alternative form of bracket,

Fig. 6 is a cross-sectional view of the post shown  
25 in Fig. 4,

Fig. 7 is a similar perspective view to Fig. 1

showing a single panel fencing structure,  
and,

Fig. 8 is a cross-sectional view of one half of a  
bottom rail means for the fencing structure  
shown in Fig. 7

5           The two panel fencing structure partly shown in Fig 1  
and the single panel fencing structure shown in Fig. 2  
includes a post member 10, a top rail 11, an open work panel  
12 and securing brackets 13. The top rail 11 extends  
10 between post 10 and another similar post 10 and the panel 12  
extends between the top rail 11 and a similar but inverted  
bottom rail means 60 shown in Figs 7 and 8.

          The post member 10 is, in this instance, a tubular  
aluminium extrusion of square cross-section but, of course,  
15 other cross-sections may be used. As can be seen in Fig. 6,  
the post member 10 has four faces 14, 15, 16 and 17 and at  
each corner there is an external bead 18 having flanges 19,  
20. Each face of the post thus has a vertically extending  
channel that is defined by the face (14, 15, 16 or 17) and the  
20 two flanges 20 and 19.

          The top rail 11 which is best seen in Figs 2, 3 and 5,  
is of inverted channel form and has a panel-receiving crown  
21 bounded by curved flanges 22. Adjacent the open end of  
the channel there are inwardly directed webs 23, 24 which  
25 are spaced apart to define a panel-receiving throat 25 that  
extends along the length of the rail 11. Depending down-  
wardly from the inner end of the webs 23, 24 are flanges 26,

27 having opposed beads 28, 29 which are adapted to grip the panel 12 therebetween. The lower ends of the flanges 26, 27 have outwardly turned flanges 30, 31 which together with the inwardly turned flanges 32, 33 of the rail 11 provide a  
5 means for supporting a glazing or decorative panel (not shown) if required. Overlying the webs 23, 24 are second webs 34, 35 and the opposed faces of each pair of webs 23, 34 and 24, 35 are serrated or grooved.

The rails may be secured to the posts by a pivoting  
10 bracket 13 as shown in Fig. 3 or by a fixed bracket 13a as shown in Fig. 5. The pivoting bracket 13 is particularly useful for supporting a panel in the form of a gate. Both brackets 13, 13a have a first flange 40 which is located in the channel that is defined by the flanges 20, 19 and a face  
15 14, 15, 16 or 17 of the post member 10. The flange 40 is placed at the required position in the channel of the post and then fixed thereto by a fastener 41 such as a self-tapping screw which passes through aperture 42.

Both brackets 13, 13a have a second flange 43 which is  
20 located between the web pairs 23, 34 and 24, 35. The second flange 43 is secured to the rail by means of a clamp 44 (see Fig. 5) which has web engaging extensions 45 that sits on top of webs 34, 35 and a threaded stem 46 which passes through the aperture 47 in the flange 43 and the throat  
25 25. A washer and nut is placed on the threaded stem 46 beneath the second flange 43 to clamp the upper face of the flange 43 against the grooves in the webs 34, 35.

The brackets 13 in Fig. 3 have a collar 48 on the first flange 40 in which is journaled a peg 49 secured to the second flange 43. An end cap 50 closes off the end of rail 11 above the bracket 13 (see Fig. 1). Fastening means 51  
5 may be provided to fix the panel 12 to the top rail 11. As indicated in fig. 3, the fastening means may be threaded so as to engage the serrations in the opposed faces of the web pairs 23, 34 and 24, 35.

As indicated above, the bottom rail means may be  
10 substantially similar to the top rail 11 except that it is inverted. Preferably, the bottom rail means is formed from two bottom rail members 60 one of which is shown in cross-section in Fig. 8. The bottom rail member 60 has web 61, 62  
15 which together with the corresponding webs of an opposed bottom rail member 60 define a panel-receiving throat that extends along the bottom rail means. At the top of the bottom rail member 60 there is a return flange 63 adapted to engage the panel 12. At the bottom of the bottom rail member 60 there is a panel receiving flange 64.

20 The opposed faces of the webs 61, 62 are serrated to provide a threaded receptacle for fastening means similar to screws 51. When two bottom rail members 60 are placed face to face they form a bottom rail substantially similar to the top rail 11 and a bracket 13 and 13a is secured thereto by  
25 inserting the second flange 43 of the bracket between the webs 61, 62 of the two rails 60.

The top of the post 10 may be closed by a cap



alternative forms of which are shown in Fig. 2 by numerals  
52 and 53. As indicated in Fig. 7, the rails may be aligned  
with the posts 10 and if the top rail 11 extends over a post  
inserts 54 are placed in the channels 20, 19, 15 and 20, 19,  
5 17. Alternatively, the rails may be mounted in an outrigger  
fashion by mounting a bracket in a side channel on post 10.

Various modifications may be made in details of design  
and construction without departing from the scope and ambit  
of the invention.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A fencing or like structure comprising:-

- (i) a pair of spaced apart upright post members each having vertically extending channel means with the channel means of each post facing one another,  
5
- (ii) a top rail of inverted channel form extending between the post members and having a pair of opposed, inwardly directed webs defining there between a panel-receiving throat that extends along the rail,  
10
- (iii) bottom rail means extending between the post members and having a panel-receiving throat that extends along the bottom rail means,
- (iv) a rectangular panel extending between and  
15 secured to the top rail and the bottom rail means with the top edge of the panel in the throat of the top rail and its bottom edge in the throat of the bottom rail means, and,
- (v) means for securing the ends of the top rail to  
20 the respective post members, said securing means including:
  - (a) a bracket having a first flange located in the channel means of the post member and a second flange located in the end of

25

the rail,

(b) means for fixing the first flange to the post member, and,

(c) means for securing the second flange to the inturned webs of the rail.

2. A fencing structure as claimed in claim 1 wherein the bottom rail means comprises a pair of opposed rail members each of which has an inwardly directed web defining there between the panel-receiving throat.

3. A fencing structure according to claim 2 and including means for securing the end of the bottom rail means to the respective post members, said bottom rail means securing means including:

5

(a) a bracket having a first flange located in the channel means of the post member and a second flange located in the end of the bottom rail members.

10

(b) means for fixing the first flange to the post member, and,

(c) means for securing the second flange to the inwardly turned webs of the bottom rail members.

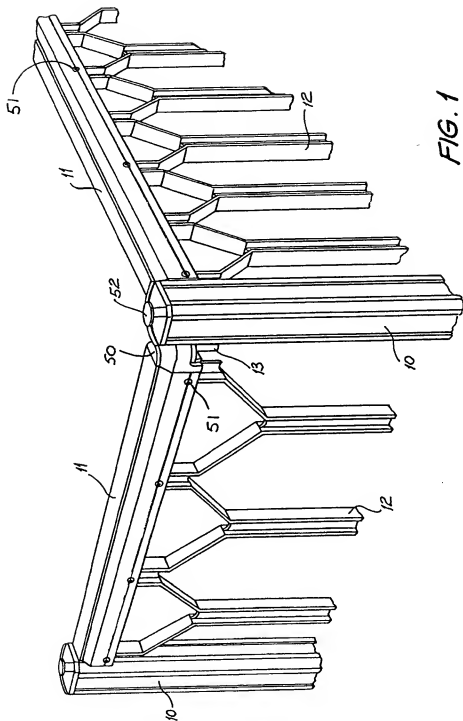
4. A fencing structure according to claim 1 wherein the top rail has a panel-receiving crown bounded by interior flanges that engage the top edge of the panel.

5. A fencing structure according to claim 1 wherein the inner ends of the inwardly directed webs of the top rail have downwardly depending flanges adapted to engage the panel therebetween.

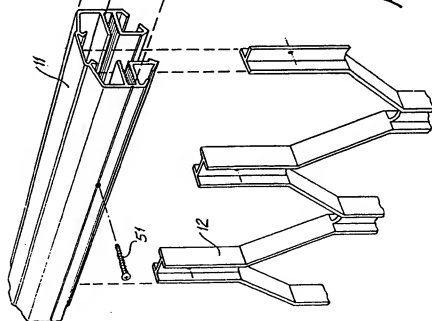
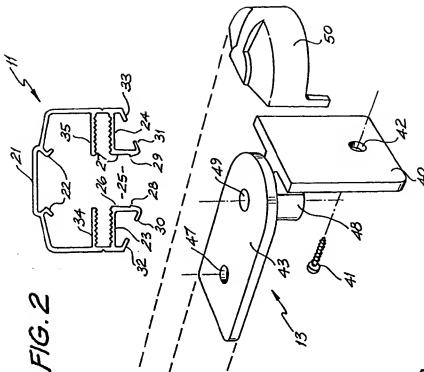
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6. A fencing structure according to claim 1 and further including a second pair of opposed inwardly directed webs which overlie the said pair of webs.
7. A fencing structure according to claim 6 wherein the opposed faces of the said and second pairs of webs are serrated or grooved.
8. A fencing structure according to claim 2 wherein each bottom rail member has a panel-receiving flange upon which the bottom edge of the panel rests.
9. A fencing structure according to claim 2 wherein the opposed bottom rail members each has a second inwardly directed web which overlies the said web.
10. A fencing structure according to claim 9 wherein the opposed faces of the said and second webs are serrated or grooved.
11. A fencing structure according to claim 1 wherein the panel is an open panel formed by slotting and stretching an extruded section.





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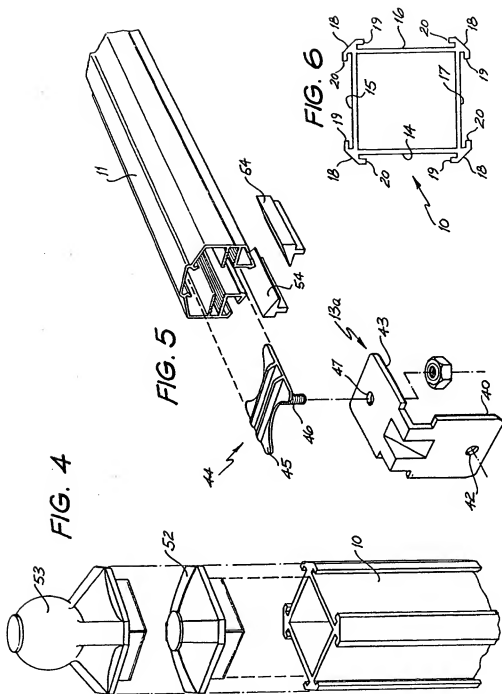


FIG. 5

FIG. 6

FIG. 4

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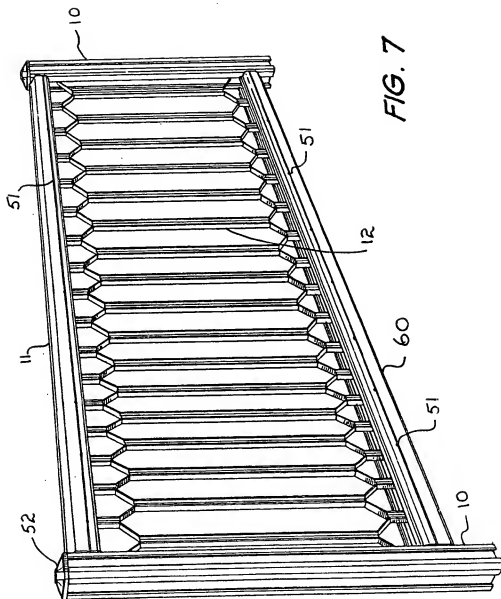


FIG. 7

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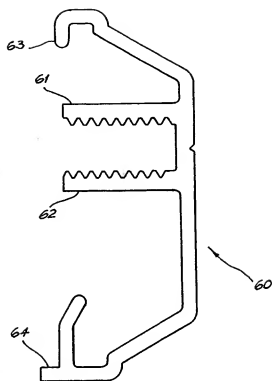


FIG. 8

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